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TITLE : ZIRCONIA CERAMICS FOR LIVING ORGANISM AND METHOD OF MANUFACTURING FOR THE SAME

ABSTRACT : PROBLEM TO BE SOLVED: To provide zirconia ceramics for living organisms of which the mechanical characteristics, more preferably slidability, are not drastically degraded in spite of long-term use and a method of manufacturing for the same.

SOLUTION: The zirconia ceramics for living organisms of $\leq 0.02 \mu\text{m}$ in the arithmetic average roughness Ra on the surface after an accelerated deterioration test carried out under conditions of 152 hours in saturated steam of 121°C and 0.20 MPa satisfying International Standard ISO 13356: 1997. The method of manufacturing the zirconia ceramics for living organisms comprises subjecting a molding of raw material powder to primary firing at a temperature ranging from the lower limit temperature of the temperature conditions under which the open porosity after firing relating to this molding attains $\leq 0.1\%$ to $+100^\circ\text{C}$, then to hot isostatic pressing treatment within a range of -10 to $+100^\circ\text{C}$ with respect to the lower limit temperature and regulating the average crystal grain size of the ceramics to $\leq 0.2 \mu\text{m}$.

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